UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
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ART UNIT	PAPER NUMBER
2112	

DATE MAILED: 06/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

<table>
<tr><td rowspan="2">Office Action Summary</td><td>Application No.</td><td colspan="2">Applicant(s)</td></tr>
<tr><td>10/635,887</td><td colspan="2">QI, YANLING</td></tr>
<tr><td></td><td>Examiner</td><td>Art Unit</td><td></td></tr>
<tr><td></td><td>Ryan M. Stiglic</td><td>2112</td><td></td></tr>
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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19 and 21* is/are rejected.

7)☒ Claim(s) *20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>06 August 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-21 are pending and have been examined.

2.   Claims 1-19 and 21 have been rejected.

3.   Claims 20 are objected to.

Specification

4.   The disclosure is objected to because of the following informalities: The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6.   Claims 1-4, 7-8, 10-12, 14-17, 19, and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Tawill et al. (US006622163B1).

For claim 1:

A method for mapping SCSI2 reservation exchanges for use in a SCSI3 storage subsystem, the

method comprising:

- receiving a SCSI2 reservation exchange (col. 6, ll. 64-65);

- translating the received SCSI2 reservation exchange into a corresponding SCSI3

  reservation exchange (col. 3, ll. 2-11; col. 7, ll. 1-6); and

- processing the SCSI3 reservation exchange to manage reservation of an identified portion

  of storage in the storage subsystem (col. 7, ll. 6-9; col. 3, ll. 2-11).

For claim 2:

The method of claim 1 wherein the step of processing comprises: forwarding the SCSI3

reservation exchange to the storage subsystem (col. 3, ll. 2-11).

For claim 3:

The method of claim 1 wherein the step of translating comprises: translating the received SCSI2

reservation exchange into a corresponding SCSI3 persistent reservation protocol exchange (col.

3, ll. 2-11; col. 7, ll. 1-9).

For claim 4:

The method of claim 3 wherein the step of translating to a SCSI3 exchange comprises:

- generating a unique identifier for a requesting host (col. 4, ll. 49-51);

- determining whether the unique identifier is known to the storage subsystem (col. 5, ll.

  17-23; Keeping a "maintained list" of the WWNs of the devices in storage network

implies determining whether the unique identifier is known to the storage subsystem. If a

device's unique identifier was not known to the storage subsystem it would not be in the

"maintained list.");

- registering the unique identifier within the storage subsystem (col. 5, ll. 17-23); and

- translating a received SCSI2 reservation request into a corresponding SCSI3 persistent

  reservation reserve request using the unique identifier (col. 3, ll. 2-11; col. 7, ll. 1-9).

For claim 7:

The method of claim 4 wherein the step of generating a unique identifier comprises: generating

said unique identifier from a WWN associated with the requesting host (col. 4, ll. 49-51; col. 5,

ll. 17-23).

For claim 8:

The method of claim 4 wherein the step of generating a unique identifier comprises: generating

said unique identifier from a WWN associated with an HBA of the requesting host (col. 4, ll. 49-

51; col. 5, ll. 17-23; According to the specification of the instant application [page 5, paragraph

2] "Each HBA may be a SCSI initiator..." Therefore an HBA is equivalent to an initiator node

as seen in Tawill Fig. 1, items 16-22.).

For claim 10:

A system comprising:

- a driver operable in a host system for generating SCSI2 reservation protocol exchanges;

  (Fig. 1, nodes 16-22; col. 6, ll. 15-16; col. 6, ll. 64-65)

- a storage subsystem adapted to process SCSI3 reservation protocol exchanges (Fig. 1,

  26;col. 4, ll. 21-34); and

- a translator communicatively coupled to said driver element and communicatively

  coupled to said storage subsystem (Fig. 1 38; col. 5, ll. 12-25; As shown in figure 38, the

  computing device 38 is communicatively with both the nodes [16-22] and storage

  subsystem [26] through switch 36), wherein said translator is adapted to translate said

  SCSI2 reservation protocol exchanges received from said driver into said SCSI3

  reservation protocol exchanges (col. 3, ll. 2-11; col. 7, ll. 1-6) and wherein said translator

  is further adapted to forward the SCSI3 reservation protocol exchanges to said storage

  subsystem (col. 7, ll. 6-9; col. 3, ll. 2-11).

For claim 11:

The system of claim 10 wherein the translator further comprises: an ID generator to generate a

unique identifier corresponding to the host system (col. 4, ll. 49-51; col. 5, ll. 17-23; col. 4, line

60 – col. 5, line 25; A computing device [Fig. 1, 38] is used to establish a fabric [Fig. 1, 28] and

assign/manage a list of WWNs and fibre channel Ids of the various nodes of the system.).

For claim 12:

The system of claim 10 wherein the translator further comprises: an ID generator to generate a

unique identifier corresponding to a host bus adapter of the host system (col. 4, ll. 49-51; col. 5,

ll. 17-23; According to the specification of the instant application [page 5, paragraph 2] "Each

HBA may be a SCSI initiator..." Therefore an HBA is equivalent to an initiator node as seen in

Tawill Fig. 1, items 16-22.).

For claim 14:

The system of claim 10 wherein said translator is resident within the host system (Fig. 1, 38).

For claim 15:

A system for processing SCSI2 reservation requests comprising:

- driver means operable in a host system for generating SCSI2 reservation requests (Fig. 1, nodes 16-22; col. 6, ll. 15-16; col. 6, ll. 64-65); and

- translator means operable in the host system and communicatively coupled to the driver means for intercepting SCSI2 reservation requests (Fig. 1 38; col. 5, ll. 12-25; As shown in figure 38, the computing device 38 is communicatively with both the nodes [16-22] and storage subsystem [26] through switch 36) and for translating the intercepted requests into SCSI3 persistent reservation requests (col. 3, ll. 2-11; col. 7, ll. 1-6).

For claim 16:

The system of claim 15 wherein the translator means further comprises: ID generator means for

generating a unique ID to be associated with the SCSI3 persistent reservation requests (col. 4, ll.

49-51; col. 5, ll. 17-23; col. 4, line 60 – col. 5, line 25; A computing device [Fig. 1, 38] is used to

establish a fabric [Fig. 1, 28] and assign/manage a list of WWNs and fibre channel Ids of the

various nodes of the system.).

For claim 17:

The system of claim 16 wherein the unique ID includes a host identifier portion useful to verify

the identity of the host system that generated the unique ID (col. 5, ll. 17-23; Keeping a

"maintained list" of the WWNs of the devices in storage network implies determining whether

the unique identifier is known to the storage subsystem. If a device's unique identifier was not

known to the storage subsystem it would not be in the "maintained list.").

For claim 19:

The system of claim 16 wherein the host system includes multiple paths for communicating with

a storage subsystem (Fig. 1, "fabric" 28 and "switch" 36) and wherein the ID generator means

further comprises: means for generating a unique ID for the host system used in translating said

SCSI2 reservation requests on all paths of the host system (col. 3, ll. 2-11; col. 7, ll. 1-9).

For claim 21:

The system of claim 20 wherein the host system includes a host bus adapter associated with each

path and wherein the means for generating a unique ID for each path includes: means for

generating each unique ID using a world-wide name (WWN) associated with each host bus

adapter (col. 4, ll. 49-51; col. 5, ll. 17-23; According to the specification of the instant

application [page 5, paragraph 2] "Each HBA may be a SCSI initiator..." Therefore an HBA is

equivalent to an initiator node as seen in Tawill Fig. 1, items 16-22.).

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 5-6, 9, 13, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Tawill in view of what was well known in the art as evidenced by Ciolli et al.

(US20020141618A1).

For claim 5:

While not explicitly taught by Tawill, translating a received SCSI2 release request into a

corresponding SCSI3 persistent clear request using the unique identifier. As applicant is aware,

in a SCSI2 subsystem a RELEASE request is used in conjunction with an initially transmitted

RESERVE request for reserving a logical unit. Tawill teaches converting/translating a SCSI

reservation command (SCSI2 RESERVE request) into a SCSI(3) persistent reserve out command

(col. 3, ll. 2-11; col. 7, ll. 1-6). As a result the SCSI2 RESERVE request is not present in the

storage subsystem. It is therefore implied that if a device wanted to relinquish use of the

reservation with a SCSI2 RELEASE request it must be translated into a SCSI(3) persistent

command with a service action of CLEAR since there exists no SCSI2 reservation in the storage

subsystem (only a SCSI3 persistent reservation).

For claim 6:

The method of claim 5 further comprising: translating a received SCSI2 bus device reset request

into a corresponding SCSI3 persistent reservation clear request using the unique identifier (col.

7, ll. 12-14).

For claims 9, 13, and 18:

Tawill teaches each node of a storage system is identified by a unique WWN (col. 4, ll. 49-51;

col. 5, ll. 17-23; Keeping a "maintained list" of the WWNs of the devices in storage network

implies determining whether the unique identifier is known to the storage subsystem. If a

device's unique identifier was not known to the storage subsystem it would not be in the

"maintained list."). Tawill also teaches a translator communicatively coupled to a driver element

and communicatively coupled to said storage subsystem (Fig. 1 38; col. 5, ll. 12-25; As shown in

figure 38, the computing device 38 is communicatively with both the nodes [16-22] and storage

subsystem [26] through switch 36), wherein said translator is adapted to translate said SCSI2

reservation protocol exchanges received from said driver into said SCSI3 reservation protocol

exchanges (col. 3, ll. 2-11; col. 7, ll. 1-6) and wherein said translator is further adapted to

forward the SCSI3 reservation protocol exchanges to said storage subsystem (col. 7, ll. 6-9; col.

3, ll. 2-11). OFFICIAL NOTICE is taken that digital signatures are well known in the art and

one of ordinary at the time of the applicant's invention would have found it obvious to use a

digital signature portion indicating generation by said translator in order to verify the integrity of

the translated SCSI2 reservation exchange (by confirming that its original digital signature is

intact and unaltered) as evidenced by Ciolli et al. (US20020141618A1) paragraph [0188].

Allowable Subject Matter

9.   Claim 20 is objected to as being dependent upon a rejected base claim, but would be

allowable if rewritten in independent form including all of the limitations of the base claim and

any intervening claims.

The Examiner has done a thorough search and found no prior art of record, alone or in

combination, that teaches or fairly suggests the limitation, "means for generating a unique ID for

each path of the host system used in translating said SCSI2 reservation requests on each path of

the host system." The Examiner notes that assigning a unique ID to each path of a system is not

novel (as evidenced by Allen et al. (5,748,611) col. 5, 35-43) however, using the unique path ID

to translate a SCSI2 reservation request is a novel feature not suggested by the prior art of record.

Conclusion

10.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

- Brunelle et al. disclose converting a register request into a SCSI Persistent Reserve Out
  command.

- Pramanick et al. disclose the emulation of SCSI Persistent reservations.

- Dimitroff et al. disclose supporting a SCSI device on a non-SCSI transport medium.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan M. Stiglic whose telephone number is 571.272.3641. The examiner can normally be reached on Monday - Friday (6:00-3:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on 571.272.3632. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RMS

PAUL R. MYERS
PRIMARY EXAMINER